REMARKS

The current application is a divisional of the 09/333,213 application, now issued as U.S. Patent No. 6,548,653 ("the '653 patent"). Per the Examiner's Office Action of September 19, 2005, Claims 48-67 of the current application have been allowed and are in condition for allowance except for the formal matters regarding sequence compliance which have been corrected as a result of this Reply and Amendment. After review of the file in preparation for allowance, Applicants take this opportunity to point out to the Examiner the discovery of a clerical error that occurred during the prosecution of this case. The minor error was a simple miss-numbering of the claims. So, as corrected, Claims 48-67 become Claims 53-72. No other changes are necessary and no new matter is entered. This "new" numbering sequence is provided herein. In order to clarify and validate this miss-numbering of claims for the Examiner, Applicants respectfully provide the following explanation:

The present application was filed, together with a Preliminary Amendment, on February 20, 2002. At the time of filing, Claims 1-26, 46-47 and 51-52 were pending, with Claim 52 being amended.

The Office Action issued on April 9, 2004 subjected the pending claims of this application to restriction. In response to the April 9, 2004 Restriction Requirement, Applicants elected the invention of Group I and as a result canceled the invention of Group II (Claims 51 and 52). Therefore, as a result of this response, Claims 1-26 and 46-47 were pending.

The Office Action of July 28, 2004 confirmed the pending claims of this application as Claims 1-26 and 46-47. In response to the July 28, 2004 Office Action, Applicants filed a Reply/Amendment on January 28, 2005. In this Reply, Applicants made a clerical mistake when numbering the "NEW" claims in the "Amendments to Claims" section of the Reply. As a result of this Amendment, new claims "48-68" were added – and incorrectly numbered. The new claim numbering should have started with number "53" and been numbered "Claims 53-73" (Claims 48-50 being canceled at the

time of filing and Claims 51 and 52 being canceled as a result of April 9, 2004 Restriction Requirement). Due to Applicant's miss-numbering, the Office Action of May 17, 2005 incorrectly identified the pending claims of the present application as being claims 48-68. (Applicant's Reply of August 9, 2005 then canceled then pending Claim 68). Because of Applicant's mistake, the pending/allowable claims were again miss-identified in the Office Action of September 19, 2005 as being claims 48-67, when in fact the pending claims (had they been numbered correctly in Applicant's Reply of January 28, 2005) are in fact Claims 53-72.

The above Amendments to the Claims section of this Reply amends the claim numbering in order to properly and correctly identify the pending/allowable claims of the present application. No new matter is added herein. Claims 53-72 are pending/allowable as indicated by the Examiner. Claims 48-68, as identified in Applicant's prior Replies and now re-numbered 53-72, are amended herein. No new claims are added herein. No claims are canceled herein.

Specification

The appropriate SEQ. ID. Numbers, and replacement page 3 are provided herein in compliance with the Examiner's concerns. Both a clean version of the amended page, as well as a marked up version are submitted herewith as per 37 CFR 1.125.

Drawings

The drawings filed on January 27, 2005 have been accepted by the Examiner.

Sequence Listing

Submitted herein is a paper copy of the revised Sequence Listing, as well as a diskette which contains a computer readable form of the revised Sequence Listing filed herewith. It is Applicant's understanding that the enclosed Sequence Listing complies with the requirements of 37 CFR §§ 1.821(f) and (g); and 1.824. The material on this diskette is identical in substance to the sequences appearing on noted page 3 of the amended specification. Furthermore, Applicant hereby states that the information recorded in computer readable form is identical to the written sequence listing filed

herewith as required by § 1.824(f) and does not contain any new matter as required under 37 CFR § 1.821(g).

Applicants respectfully submit that the pending claims of this application are in condition for allowance, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested.

If the Examiner disagrees with any of the remarks herein, or believes for any other reason that direct contact with Applicant's attorney would advance the prosecution of the case to finality, the Examiner is invited to telephone the undersigned at the number given below. Consideration of this Amendment is respectfully requested.

The Commissioner is authorized to charge any fee which may now or hereafter be due for this divisional application to GTC Biotherapeutics' Deposit Account No. 502092.

Early and favorable action is earnestly solicited.

Respectfully Submitted,

Date: 9/29/05

By: _____

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acids in the peptide linker is selected from the group consisting of (Gly, Ser, Asn, Thr and Ala; the peptide linker includes a Gly-Ser element.

In a preferred embodiment, the fusion protein includes a peptide linker and the peptide linker includes a sequence having the formula (Ser-Gly-G1y-G1y-G1y)y (SEQ. ID 1) wherein y is 1, 2,3, 4, 5, 6,7, or 8. Preferably, the peptide linker includes a sequence having the formula $(Ser\text{-}Gly\text{-}Gly\text{-}Gly\text{-}Gly)_3$ (SEQ. ID 1). Preferably, the peptide linker includes a sequence having the formula $((Ser\text{-}Gly\text{-}Gly\text{-}Gly\text{-}Gly_4\text{-}Ser\text{-}Pro)$ (SEQ. ID 3).

In a preferred embodiment, the fusion protein includes a peptide linker and the peptide linker includes a sequence having the formula (Ser-Ser-Ser-Ser-Gly)y (SEQ ID 5) wherein y is 1,2, 3, 4, 5,6, 7, or 8. Preferably, the peptide linker includes a sequence having the formula $((Ser\text{-}Ser\text{-}Ser\text{-}Ser\text{-}Gly)_3\text{-}Ser\text{-}Pro)$ (SEQ. ID 4).

In another aspect, the invention features, an EPOa-hSA fusion protein wherein the EPOa includes amino acid residues G1n24, G1n38, G1n83 and A1a126.

In a preferred embodiment the EPOa is G1n24, G1n38, Gln83, A1a126 EPO (i.e., only amino acids 24, 38, 83, and 126 differ from wild type).

In another aspect, the invention features, an EPOa-hSA fusion protein which includes from left to right, an EPOa which includes amino acid residues G1n24, Gln38, G1n83 and Ala126, a peptide linker, e.g., a peptide linker having the formula $((Ser\text{-}Gly\text{-}Gly\text{-}GIy\text{-}Gly)_4\text{-}Ser\text{-}Pro)$ (SEQ. ID 3), and human serum albumin.

In a preferred embodiment the EPOa is G1n24, G1n38, G1n83, A1a126 EPO.

In a preferred embodiment the fusion protein is from left to right, G1n24, G1n38, Gln83, Ala126 EPO, a peptide linker having the formula $((Ser\text{-}Gly\text{-}Gly\text{-}Gly\text{-}Gly)_4\text{-}Ser\text{-}Pro)$ (SEQ. ID 3), and human serum albumin.

In another aspect, the invention features, an EPOa-hSA fusion protein which includes, from left to right, human serum albumin, a peptide linker, e.g., a peptide linker having the formula $((Ser\text{-}Gly\text{-}Gly\text{-}Gly\text{-}Gly)_{34}\text{-}Ser\text{-}Pro)$ (SEQ. ID 3), and an EPOa which includes amino acid residues G1n24, G1n38, G1n83 and Ala126.

In a preferred embodiment the EPOa is G1n24, G1n38, Gln83, Ala126 EPO.

In a preferred embodiment the fusion protein is from left to right, human serum albumin, a peptide linker having the formula $((Ser\text{-}Gly\text{-}G1y\text{-}GIy\text{-}Gly)_4\text{-}Ser\text{-}Pro)$ (SEQ. ID 3), and Gln24, Gln38, G1n83, A1a126 EPO.